

# Employments effects of Vocational Rehabilitation in Germany

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## **Valorization addendum**

In this addendum, the relevance of this thesis for policy and practice is described.

Work disability is a challenge for social security systems, affecting millions of people worldwide. At the same time, social policymakers have implemented vocational rehabilitation programs aimed at improving the chances for re-employment despite physical limitations and other health restrictions. So far, much of the empirical evidence on the effects of vocational rehabilitation in Germany has been confined to small sample sizes and specific institutional settings. In this thesis, unique administrative data, a relevant time of follow-up and advanced statistical measures to handle confounding effects have been utilized in order to provide new and informative evidence on the effects of vocational rehabilitation on employment outcomes. This evidence is needed for policymakers to be able to strengthen the role and effectiveness of vocational rehabilitation programs.

This thesis has made four major contributions to the analysis of the effectiveness of vocational rehabilitation programs for persons with disabilities:

In chapter two it was investigated how socio-economic factors influenced the employment outcomes after participation in vocational rehabilitation. The analysis included identifying which factors positively affect re-employment chances and which socio-economic characteristics tend to act as barriers to successful work reintegration. Several risk factors were consequently identified that were associated with little improvement in the employment status: Among the different factors tested, old-age, low prior educational outcomes and irregular employment relationships were especially associated with less improvement in the employment status. The attained findings in this chapter support the argument that providers of vocational rehabilitation services need to be aware of the influence demographic and occupational factors have on re-employment chances: the socio-economic status and the work environment significantly affect return-to-work outcomes after participation in vocational rehabilitation. This study has shown that factors such as greater age or low prior educational attainments decrease the chances of a successful return to employment. To improve work participation outcomes, it is therefore recommended that policy targets these groups. For example, by improving access to and the effectiveness of individual case management; for case managers it is particularly important to consider the effects of the identified contextual factors as they shape the values and goals of the individuals and influence the outcome of the work reintegration process.

In chapter three the impact of re-training was assessed through a comparison with similar program dropouts. While taking the effect of confounding variables into account, the analyses examined to what extent the vocational re-training program, the most time-intensive and costly type of vocational program available, impacted employment outcomes and to what extent the programs reduced the likelihood of receiving an earnings incapacity pension. The conclusion of the analysis was that the vocational re-training programs analyzed had a positive impact on rehabilitants' work participation outcomes. The estimated treatment effects provide policymakers with detailed information about the interventions' abilities to improve the individuals' employment statuses and show to what extent these improvements were sustained over-time: Despite the presence of physical limitations, completing the re-training measures greatly improved the employment situation of the rehabilitants, i.e. graduating from a re-training program resulted in more days in employment and higher annual income earned while at the same time dependency on social security benefits was reduced.

The analysis showed that the principal objective, namely, to improve participation in employment, was generally achieved. Contrary to the common misconception that "off-the-job training" is relatively ineffective, this thesis has provided an empirical example of the positive impact of the programs. Therefore, a policy recommendation offered by this thesis is to continue to invest in vocational re-training as it generates a positive impact on participating individuals. The gathered evidence in this thesis is not only of interest to those who are currently undergoing re-training or those that are planning to do so in the future, but also gives the implementing agencies a detailed evaluation of the impact of their work. In addition to its empirical relevance, the research also contributes to the methodological debate on how to estimate the impact of labor market programs on employment outcomes from observational data using quasi-experiments. This approach, so far, has been widely underutilized in vocational rehabilitation research in Germany and can hopefully inspire other researchers to embark on similar research projects.

Another relevant conclusion from the analysis in chapter three is that program dropout was associated with significantly worse employment outcomes, compared to program graduation. Unsuccessful completing seems to be a strong predictor for worse work participation outcomes. Accordingly, preventing dropout and, thus, improving the overall effectiveness and efficiency of re-training measures should be an important policy target. Since about half of the dropouts were related to medical reasons, better a priori screening and medical supervision during the programs may contribute to reducing program dropout rates. Regarding the non-medical dropouts, many were due to performance issues and failed examinations. As such it would be

worthwhile to further explore why the individuals did not finish the programs and what type of assistance could be provided to increase graduation rates. Moreover, the outcome of allocation practices should be further examined: Are the individuals satisfied with the occupational re-training choice? Would they rather have enrolled in a different trade or occupation? Are there other reasons that influence how well the rehabilitants perform in the examinations? Given the large benefits associated with completed re-training and the comparatively large costs of providing the measures, these are relevant questions.

In chapter four, it was examined, to what extent one-year and two-year vocational education programs have similar effects on employment outcomes, when directly compared with each other. The literature on the comparative effects of one- and two-year re-training has previously found that reduced training may lead to better outcomes: a shortening of the average duration of measures tends to have a favorable effect in the short term because the lock-in effect loses weight compared to the program effect. However, when assessed over a longer time period, the more involved training programs have been found to have a larger impact on work participation outcomes. The analysis in this thesis showed that the disadvantages of longer program duration were offset by higher employment outcomes in the long-term for participants of two-year re-training programs. From the perspective of two-year re-training participants, the additional year of re-training, thus, generally paid off, i.e. the treatment effects on the treated with regards to income and employment days were positive for two-year re-training participants and the likelihood to be awarded a pension due to a reduced earnings capacity was also lower. These results are an important reassurance, that the additional time invested into the longer training measure actually paid off for the individuals involved.

Furthermore, the retrieved results indicate that program allocation was, also, to some extent effective. The average treatment effect on the treated of two-year program participants was larger compared to the sample average treatment effect across both treatment groups and the average treatment effect on the treated of the one-year program participants (which shows the income loss associated with a reduced duration of training). Thus, the average participant that was allocated into two-year re-training benefitted more from the measures, than the average participant that was allocated a one-year re-training would have. While these estimates are based on averages and are a product of econometric analysis, further explorative analysis is needed to examine the conditions under which participants of one-year programs could profit from an increased duration of re-training.

In chapter five, the cost-effectiveness and efficiency of re-training were evaluated from social security provider's perspective. The three prior chapters showed what impact vocational rehabilitation may have on the individuals involved; in the fifth chapter, secondary effects for social security were calculated. These comprised increased contributions and tax collection and a reduction in the paid compensation benefits. The cost-benefit analysis carried out provides new evidence on the secondary effects of vocational re-training (on social security). While oftentimes the costs of rehabilitation and work reintegration measures dominate public discussions, the cost-benefit analysis in this study puts the costs and benefits into comparison. The result of this analysis was that vocational re-training was cost-effective when compared to the alternative of no completion of re-training. However, in relation to earlier studies, that usually only considered few years of follow up, this study has shown that a much longer post-treatment observation period is needed for the benefits of the programs to outweigh the costs.